

In the Claims

1. (currently amended) An ink jet ink comprising at least one dialkyl N-hydroxylamine salt of the formula $(R_{51}R_{52}N-OH) \cdot (HY)$.

or

an ink jet system recording material comprising a recording material and at least one colored ink to be applied to the recording material by means of an ink jet nozzle, wherein the recording material or the at least one colored ink comprises at least one dialkyl N-hydroxylamine salt of the formula $(R_{51}R_{52}N-OH) \cdot (HY)$,

where

R_{51} is alkyl of 1 to 36 carbon atoms, cycloalkyl of 5 to 12 carbon atoms or aralkyl of 7 to 9 carbon atoms; or R_{51} is said alkyl, cycloalkyl or aralkyl substituted by one to six alkyl of 1 to 12 carbon atoms, halogen, cyano, $E_{41}O-$, $E_{41}CO-$, $E_{41}OCO-$, $E_{41}COO-$, $E_{41}S-$, $E_{41}SO-$, $E_{41}SO_2-$, $-NH_2$, $-NHE_{41}$, $-NE_{41}E_{42}$, $-PO(OE_{41})(OE_{42})$ or $-OPO(OE_{41})(OE_{42})$ groups;

R_{52} is hydrogen or independently has the same meaning as R_{51} , where at least one of R_{51} and R_{52} contains a hydrogen alpha to the $-NOH$ moiety; ~~or~~

~~R_{51} and R_{52} together form a C_{2-12} heterocyclic ring which contains at least one carbon-substituted hydrogen alpha to the $-NOH$ moiety, where said C_{2-12} heterocyclic ring is unsubstituted or is substituted by one to three alkyl of 1 to 12 carbon atoms, halogen, cyano, $E_{41}O-$, $E_{41}CO-$, $E_{41}OCO-$, $E_{41}COO-$, $E_{41}S-$, $E_{41}SO-$, $E_{41}SO_2-$, $-NH_2$, $-NHE_{41}$, $-NE_{41}E_{42}$, $-PO(OE_{41})(OE_{42})$ or $-OPO(OE_{41})(OE_{42})$ groups; or where said C_{2-12} heterocyclic ring is interrupted by one to three $O-$, $-NE_{41}$, $-CO-$, $-CONE_{41}$, $-S-$, $-SO-$, $-SO_2-$, $-COO-$, $-PO_3-$ or $-PO_4E_{41}$ groups; or where said heterocyclic ring is both substituted and interrupted by said groups;~~

E_{41} and E_{42} independently are hydrogen, alkyl of 1 to 4 carbon atoms or alkyl of 1 to 4 carbon atoms substituted by one to three hydroxyl groups; or E_{41} and E_{42} independently are an oligomer of

poly(ethylene glycol) or poly(propylene glycol) terminated by hydroxyl, methoxy, acetate or propionate, where the oligomer has a molecular weight up to about 500;
and

HY is an inorganic or organic acid.

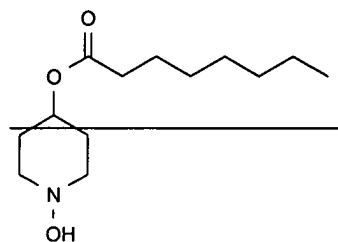
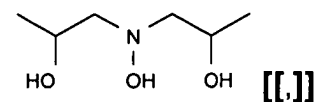
2-9. (canceled)

10. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 where Y is phosphate, phosphonate, carbonate, bicarbonate, nitrate, chloride, bromide, bisulfite, sulfite, bisulfate, sulfate, borate, formate, acetate, benzoate, citrate, oxalate, tartrate, acrylate, polyacrylate, fumarate, maleate, itaconate, glycolate, gluconate, malate, mandelate, tiglate, ascorbate, polymethacrylate, a carboxylate of nitrilotriacetic acid, hydroxyethylethylenediaminetriacetic acid, ethylenediaminetetraacetic acid or of diethylenetriaminepentaacetic acid, a diethylenediamine-tetraacetic acid or of diethylenetriaminepentaacetic acid, an alkylsulfonate or an arylsulfonate.

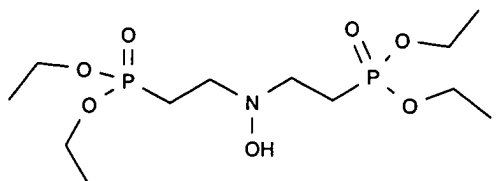
11. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 where Y is chloride, bisulfate, sulfate, phosphate, nitrate, ascorbate, formate, acetate, benzoate, oxalate, citrate, a carboxylate of ethylenediaminetetraacetic acid or of diethylenetriaminepentaacetic acid or polyacrylate.

12. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 where the dialkyl N-hydroxylamine salts are salts of N,N-dibenzylhydroxylamine, N,N-dimethylhydroxylamine, N,N-diethylhydroxylamine, N,N-bis(2-hydroxypropyl)hydroxylamine, N,N-bis(3-hydroxypropyl)hydroxylamine, N,N-bis(2-carboxyethyl)hydroxylamine, N,N-bis(benzylthiomethyl)hydroxylamine, N,N-dioctylhydroxylamine, N,N-dilaurylhydroxylamine, N,N-didodecylhydroxylamine, N,N-ditetradecylhydroxylamine, N,N-dihexadecylhydroxylamine, N,N-dioctadecylhydroxylamine, N-hexadecyl-N-tetradecylhydroxylamine, N-hexadecyl-N-heptadecylhydroxylamine, N-hexadecyl-N-octadecylhydroxylamine, N-heptadecyl-N-octadecylhydroxylamine, N-methyl-N-

octadecylhydroxylamine or N,N-di(hydrogenated tallow)hydroxylamine,



or



13. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 where the dialkyl N-hydroxylamine salts are salts of N,N-diethylhydroxylamine, N,N-bis(2-hydroxypropyl)hydroxylamine, N,N-bis(3-hydroxypropyl)hydroxylamine, N,N-dibenzylhydroxylamine or the N,N-di(alkyl)hydroxylamine produced by the direct oxidation of N,N-di(hydrogenated tallow)amine.

14. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 where the dialkyl N-hydroxylamine salt is tris(N,N-diethylhydroxylammonium) citrate.

15. (previously presented) An ink jet ink according to claim 1 which comprises about 0.01 to about 30% by weight of at least one dialkyl N-hydroxylamine salt, based on the weight of the ink jet ink.

16. (currently amended) An ink jet ~~system~~recording material according to claim 1, wherein the recording material ~~which~~ comprises about 1 to about 10000 mg/m² of at least one dialkyl N-hydroxylamine salt.

17. (currently amended) An ink jet ink or ink jet ~~system~~recording material according to claim 1 further comprising a UV absorber selected from the group consisting of the hydroxyphenylbenzotriazoles, the tris-aryl-s-triazines, the benzophenones, the α -cyanoacrylates, the oxanilides, the benzoxazinones, the benzoates and the α -alkyl cinnamates.

18. (currently amended) An ink jet ink or ink jet ~~system~~~~recording material~~ according to claim 1 further comprising a UV absorber selected from the group consisting of the hydroxyphenylbenzotriazoles, the tris-aryl-s-triazines and the benzophenones.

19. (currently amended) An ink jet ink or ink jet ~~system~~~~recording material~~ according to claim 1 further comprising a UV absorber selected from the group consisting of

5-chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di-tert-amylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
2-(2-hydroxy-5-tert-octylphenyl)-2H-benzotriazole;
2-(2-hydroxy-5-methylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3-tert-butyl-5-methylphenyl)-2H-benzotriazole-5-sulfonic acid, sodium salt;
3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydrocinnamic acid;
12-hydroxy-3,6,9-trioxadodecyl 3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydrocinnamate;
octyl 3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydrocinnamate;
2-(3-tert-butyl-2-hydroxy-5-(2-(ω -hydroxy-octa-(ethyleneoxy)carbonyl-ethyl)-phenyl)-2H-benzotriazole;
4,6-bis(2,4-dimethylphenyl)-2-(4-octyloxy-2-hydroxyphenyl)-s-triazine;
2,4-bis(2-hydroxy-4-butyloxyphenyl)-6-(2,4-bis-butyloxyphenyl)-1,3,5-triazine;
2-[4-(dodecyloxy/tridecyloxy-2-hydroxypropoxy)-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine;
the reaction product of tris(2,4-dihydroxyphenyl)-1,3,5-triazine with the mixture of α -chloropropionic esters (made from isomer mixture of C₇-C₉alcohols);
2,4-dihydroxybenzophenone;
2,2',4,4'-tetrahydroxy-5,5'-disulfobenzophenone, disodium salt;
2-hydroxy-4-octyloxybenzophenone;
2-hydroxy-4-dodecyloxybenzophenone;

2,4-dihydroxybenzophenone-5-sulfonic acid and salts thereof;
2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof;
2,2'-dihydroxy-4,4'-dimethoxybenzophenone-5,5'-disodium sulfonate;
3-(2H-benzotriazol-2-yl)-4-hydroxy-5-sec-butylbenzenesulfonic acid, sodium salt; and
2-(2'-hydroxy-3'-tert-butyl-5'-polyglycolpropionate-phenyl)benzotriazole.

20. (canceled)

21. (previously presented) A process for stabilizing ink jet prints,

which process comprises applying to a recording material for ink jet printing an ink composition comprising

an aqueous or an organic solvent dye solution and

at least one dialkyl N-hydroxylamine salt according to claim 1 and

drying said recording material.

22. (previously presented) A process for stabilizing ink jet prints,

which process comprises applying to a recording material for ink jet printing

a casting or coating dispersion or an aqueous or organic solution comprising

at least one dialkyl N-hydroxylamine salt according to claim 1 and

further applying either an ink composition comprising

an aqueous or an organic solvent dye solution, or an ink composition comprising an aqueous or an organic solvent dye solution and at least one dialkyl N-hydroxylamine salt according to claim 1 and

drying said recording material.

23. (new) An ink jet recording material which is coated with at least one layer which is able to absorb ink,

which at least one layer comprises at least one dialkyl N-hydroxylamine salt of the formula $(R_{51}R_{52}N-OH) \cdot (HY)$,

where

R_{51} is alkyl of 1 to 36 carbon atoms, cycloalkyl of 5 to 12 carbon atoms or aralkyl of 7 to 9 carbon atoms; or R_{51} is said alkyl, cycloalkyl or aralkyl substituted by one to six alkyl of 1 to 12 carbon atoms, halogen, cyano, $E_{41}O-$, $E_{41}CO-$, $E_{41}OCO-$, $E_{41}COO-$, $E_{41}S-$, $E_{41}SO-$, $E_{41}SO_2-$, $-NH_2$, $-NHE_{41}$, $-NE_{41}E_{42}$, $-PO(OE_{41})(OE_{42})$ or $-OPO(OE_{41})(OE_{42})$ groups;

R_{52} is hydrogen or independently has the same meaning as R_{51} , where at least one of R_{51} and R_{52} contains a hydrogen alpha to the $-NOH$ moiety;

E_{41} and E_{42} independently are hydrogen, alkyl of 1 to 4 carbon atoms or alkyl of 1 to 4 carbon atoms substituted by one to three hydroxyl groups; or E_{41} and E_{42} independently are an oligomer of poly(ethylene glycol) or poly(propylene glycol) terminated by hydroxyl, methoxy, acetate or propionate, where the oligomer has a molecular weight up to about 500; and

HY is an inorganic or organic acid.

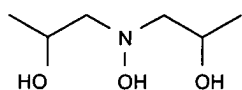
24. (new) An ink jet recording material according to claim 23 where Y is phosphate, phosphonate, carbonate, bicarbonate, nitrate, chloride, bromide, bisulfite, sulfite, bisulfate, sulfate, borate, formate, acetate, benzoate, citrate, oxalate, tartrate, acrylate, polyacrylate, fumarate, maleate, itaconate,

glycolate, gluconate, malate, mandelate, tiglate, ascorbate, polymethacrylate, a carboxylate of nitrilotriacetic acid, hydroxyethylethylenediaminetriacetic acid, ethylenediaminetetraacetic acid or of diethylenetriaminepentaacetic acid, a diethylenediaminetetraacetic acid or of diethylenetriaminepentaacetic acid, an alkylsulfonate or an arylsulfonate.

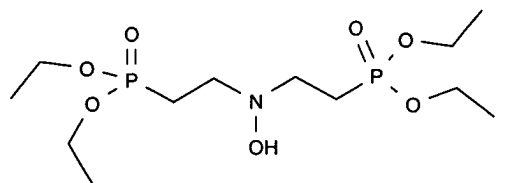
25. (new) An ink jet recording material according to claim **23** where Y is chloride, bisulfate, sulfate, phosphate, nitrate, ascorbate, formate, acetate, benzoate, oxalate, citrate, a carboxylate of ethylenediaminetetraacetic acid or of diethylenetriaminepentaacetic acid or polyacrylate.

26. (new) An ink jet recording material according to claim **23** where the dialkyl N-hydroxylamine salts are salts of N,N-dibenzylhydroxylamine, N,N-dimethylhydroxylamine, N,N-diethylhydroxylamine, N,N-bis(2-hydroxypropyl)hydroxylamine, N,N-bis(3-hydroxypropyl)hydroxylamine, N,N-bis(2-carboxyethyl)hydroxylamine, N,N-bis(benzylthiomethyl)hydroxylamine, N,N-dioctylhydroxylamine, N,N-dilaurylhydroxylamine, N,N-didodecylhydroxylamine, N,N-ditetradecylhydroxylamine, N,N-dihexadecylhydroxylamine, N,N-dioctadecylhydroxylamine, N-hexadecyl-N-tetradecylhydroxylamine, N-hexadecyl-N-heptadecylhydroxylamine, N-hexadecyl-N-octadecylhydroxylamine, N-heptadecyl-N-octadecylhydroxylamine, N-methyl-N-octadecylhydroxylamine or N,N-di(hydrogenated

tallow)hydroxylamine,



or



27. (new) An ink jet recording material according to claim **23** where the dialkyl N-hydroxylamine salts are salts of N,N-diethylhydroxylamine, N,N-bis(2-hydroxypropyl)hydroxylamine, N,N-bis(3-hydroxypropyl)hydroxylamine, N,N-dibenzylhydroxylamine or the N,N-di(alkyl)hydroxylamine produced by the direct oxidation of N,N-di(hydrogenated tallow)amine.

28. (new) An ink jet recording material according to claim **23** where the dialkyl N-hydroxylamine salt is tris(N,N-diethylhydroxylammonium) citrate.

29. (new) An ink jet recording material according to claim **23** which comprises about 1 to about 10000 mg/m² of at least one dialkyl N-hydroxylamine salt.

30. (new) An ink jet recording material according to claim **23** further comprising a UV absorber selected from the group consisting of the hydroxyphenylbenzotriazoles, the tris-aryl-s-triazines, the benzophenones, the α -cyanoacrylates, the oxanilides, the benzoxazinones, the benzoates and the α -alkyl cinnamates.

31. (new) An ink jet recording material according to claim **23** further comprising a UV absorber selected from the group consisting of the hydroxyphenylbenzotriazoles, the tris-aryl-s-triazines and the benzophenones.

32. (new) An ink jet recording material according to claim **23** further comprising a UV absorber selected from the group consisting of

5-chloro-2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di-tert-butylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di-tert-amylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3,5-di- α -cumylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3- α -cumyl-5-tert-octylphenyl)-2H-benzotriazole;
2-(2-hydroxy-5-tert-octylphenyl)-2H-benzotriazole;
2-(2-hydroxy-5-methylphenyl)-2H-benzotriazole;
2-(2-hydroxy-3-tert-butyl-5-methylphenyl)-2H-benzotriazole-5-sulfonic acid, sodium salt;
3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydrocinnamic acid;
12-hydroxy-3,6,9-trioxadodecyl 3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydro-
cinnamate;
octyl 3-tert-butyl-4-hydroxy-5-(2H-benzotriazol-2-yl)-hydrocinnamate;
2-(3-t-butyl-2-hydroxy-5-(2-(ω -hydroxy-octa-(ethyleneoxy)carbonyl-ethyl)-phenyl)-2H-
benzotriazole;

4,6-bis(2,4-dimethylphenyl)-2-(4-octyloxy-2-hydroxyphenyl)-s-triazine;
2,4-bis(2-hydroxy-4-butyloxyphenyl)-6-(2,4-bis-butyloxyphenyl)-1,3,5-triazine;
2-[4-(dodecyloxy/tridecyloxy-2-hydroxypropoxy)-2-hydroxyphenyl]-4,6-bis(2,4-dimethylphenyl)1,3,5-triazine;

the reaction product of tris(2,4-dihydroxyphenyl)-1,3,5-triazine with the mixture of α -chloropropionic esters (made from isomer mixture of C₇-C₉alcohols);

2,4-dihydroxybenzophenone;

2,2',4,4'-tetrahydroxy-5,5'-disulfobenzophenone, disodium salt;

2-hydroxy-4-octyloxybenzophenone;

2-hydroxy-4-dodecyloxybenzophenone;

2,4-dihydroxybenzophenone-5-sulfonic acid and salts thereof;

2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof;

2,2'-dihydroxy-4,4'-dimethoxybenzophenone-5,5'-disodium sulfonate;

3-(2H-benzotriazol-2-yl)-4-hydroxy-5-sec-butylbenzenesulfonic acid, sodium salt; and

2-(2'-hydroxy-3'-tert-butyl-5'-polyglycolpropionate-phenyl)benzotriazole.